Possible rare effects in course of QGP blob cooling and hadronization

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Abstract

Evolution of QGP blob created in heavy ion collisions is considered within the Double Phase Transition Model (DPTM). This model is based on the assumption that the chiral restoration and deconfinement phase transitions do not coincide, with the third Q phase - involving free massive constituent quarks- being formed at the intermediate stage of evolution. It is shown that formation of the intermediate phase is to result in possibility of exotic channeles of hadronization and appearance of certain rare event patterns ("fragmentation grenade", "flaming ice-cream", "porous spitting blob", etc.) These patterns do differ significantly by the momentum- and rapidity-distribution and could be detected only on the base of event-by-event analysis. Observation of these rare events could serve as a signal of both, QGP formation and two first-order phase transitions in course of its evolution.

Preprint submitted to Elsevier Preprint *20 December 2000*